

C. MACKH.
IRONING-APPARATUS.

No. 179,121.

Patented June 27, 1876.

Fig. 1

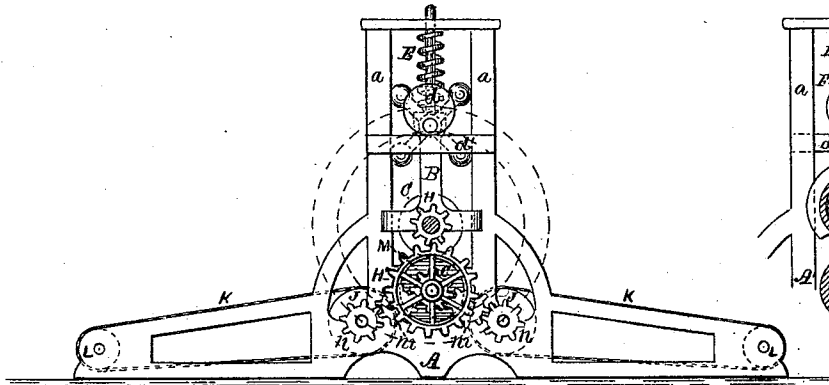


Fig. 3

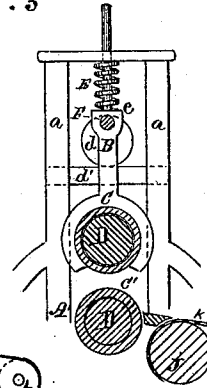


Fig. 2

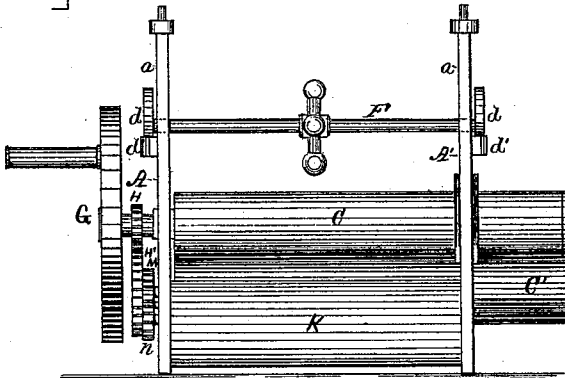


Fig. 4

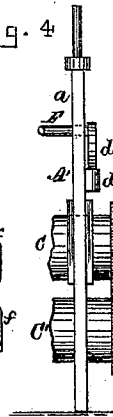


Fig. 5

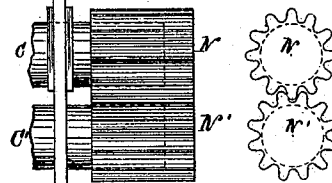
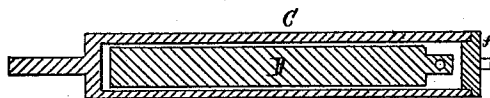


Fig. 6



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UNITED STATES PATENT OFFICE.

CHARLES MACKH, OF ELGIN, ILLINOIS.

IMPROVEMENT IN IRONING APPARATUS.

Specification forming part of Letters Patent No. **179,121**, dated June 27, 1876; application filed April 24, 1876.

To all whom it may concern:

Be it known that I, CHARLES MACKH, of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Ironing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a side elevation of an ironing-machine embodying my invention. Fig. 2 represents an end view of the same. Figs. 3 and 4 represent detail sectional elevations of the same. Fig. 5 represents an end view of the fluting-rollers, detached; and Fig. 6 represents a longitudinal central section of the upper ironing-roller.

Like letters of reference indicate like parts.

My invention relates to that class of machines employed in ironing articles or fabrics of various kinds, and so arranged as to facilitate the process of ironing, and improve the quality of the work.

To that end my invention consists in the several combinations of parts, as is herein-after more particularly described.

In the drawing, A A' are the side pieces of the frame of the machine, which are made of metal, and connected each to the other laterally by suitable cross-bars. (Not shown.) B B are vertical uprights secured between the posts *a a* of the side pieces of the frame, and so arranged as to admit of a free and easy ascending and descending movement. C is the upper ironing-roller journaled to the uprights B B', and so arranged as to rise and fall with the uprights. C' is the lower ironing-roller journaled to the side pieces A A' of the frame immediately under roller C. The said rollers are made of metal, and of the proper length to extend laterally from the side piece A at one side of the machine, as shown in Fig. 2, and are made hollow to receive the core D, which is used for heating the rollers. E E are coiled springs secured on the respective uprights B B between the shoulder *c* thereon and the bars through which said uprights pass. The tension of the springs is such as to hold

roller C against roller C', and so as to produce the requisite pressure upon the article being ironed as it passes between the rollers, and at the same time yield sufficiently to admit of the passing of articles of varied thickness between the rollers. F is a transverse shaft journaled at its ends to the respective uprights B B, and so arranged as to rise and fall with said uprights. Mounted upon each end of said shaft F is an eccentric, *d*, adapted to rest upon a horizontal bar, *d'*, attached to the posts *a a* of the frame, and so arranged as to impart an upward movement to the uprights, and consequently to the roller C, when shaft F is rotated, and hold the roller C in an elevated position when the eccentrics are turned to the proper point and are at rest. G is a crank-wheel mounted on the shaft of roller C for imparting a rotary movement to said roller. Mounted on the shaft of said roller C is a gear-pinion, H, which engages with a gear-wheel, H', on the shaft of roller C', whereby a rotary motion is imparted to roller C' by the rotation of roller C. J J are transverse rollers journaled to the side pieces A A' of the frame in close proximity to roller C', and are so arranged as to freely revolve. K K are carrying-aprons, which are made of any suitable material, and adjusted to pass around the rollers J J, respectively, to and around similar transverse rollers L L, which are journaled to the side pieces of the frame at the end of the machine, as shown in Fig. 1. M is a gear-pinion mounted on the shaft of roller C', and adjusted to engage with intermediate gear-pinions *m m*, which are journaled to the side of the frame, and adjusted to engage with corresponding gear-pinions *n n* on the shafts of the rollers J J, respectively, whereby a rotary motion is imparted to said rollers J J by the rotation of roller C', and causing the respective carrying-aprons to move simultaneously with each other and with the said roller C'. The diameter of each of the rollers J J, and the arrangement of the gear-pinions operating them, are such as to cause the carrying-aprons to move with the same speed as that of the circumference of roller C', whereby the article being ironed is carried to and from the rollers at the same speed with which it passes between the rollers.

In the process of ironing it is necessary to produce a given amount of sliding friction upon the article being ironed, so as to produce the requisite glossy finish; and to accomplish this I so arrange the gearing operating the lower roller C' as to cause it to revolve only about one-third as fast as the upper roller C, and by reason of the frictional contact of the article being ironed upon the carrying-aprons and lower roller C' the article is prevented from being drawn forward by the upper roller C, thereby causing the circumference of said roller to slide upon the surface of the article as it passes between the rollers.

The object of extending one end of the rollers C C' outward beyond the side of the machine, as described, is to provide a means of ironing small articles such as shirt-wristbands, collars, and other similar articles, which should pass between the rollers without being folded; and also to admit of securing the fluting-rollers N N' upon said rollers C C'. The rollers N and N' are made of any suitable metal, and are made hollow, the cavity in each being such as to fit the circumference of the respective rollers C C', and so as to allow the rollers N N' to be readily adjusted to and on said rollers C C', when said rollers N N' are to be used. Each of the rollers N N' is grooved longitudinally, and so as to form radial leaves which fit into the grooves of its fellow roller, as shown in Fig. 5, when the rollers C C' are rotated, by which means the material to be fluted is crimped or fluted by being passed between them. To compensate for the unequal velocity of the rollers C C', so as to allow the rollers N N' to mesh together, I secure the roller N firmly to the roller C by any suitable means which will cause them to revolve together, and secure the lower roller N' loosely upon the lower roller C' by any suitable means which will allow said roller N' to freely revolve thereon. The end of each of the rollers C C' is provided with a cap, f, adapted to closely fit the cavity thereof, after the heated core has been inserted therein, for the purpose of retaining the heat in the cavity.

The operation of my said improved ironing-machine is as follows: The cores D are properly heated and placed with the cavities of the rollers C C', respectively, and the caps f adjusted to the ends of said rollers. The article to be ironed is then placed smoothly upon the front carrying-apron, and motion is

then imparted to the rollers, which causes the article to pass between the rollers to and upon the rear carrying-apron, the friction of the upper roller producing a smooth and glossy surface on the article, while the heat radiating from the rollers absorbs all moisture from the article. To adjust the fluting-rollers N N' for use shaft F is rotated sufficiently to cause the eccentrics d to bear upon bars d', thereby elevating roller C to the requisite point above roller C' to admit of arranging the rollers N N' in proper position, as hereinbefore described. The arrangement of the gear-wheels operating the lower roller C' is such as to allow the upper roller C to ascend and descend without causing the gear to backlash or become disengaged.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an ironing-machine, the combination, with the endless carrying-apron K K, of the ironing-rollers C C' and a system of gear-wheels for imparting a positive rotary motion to the said rollers and to the carrying-aprons, and so that the roller C shall move at a greater velocity than the roller C' and the aprons, substantially as specified.

2. In an ironing-machine, the combination, with the lower roller C', of the endless carrying-aprons K K, arranged on opposite sides of the said roller, and wholly disconnected therefrom, and adjusted to revolve simultaneously therewith, substantially as and for the purpose specified.

3. The combination, with the uprights B B supporting the upper roller C, of the shaft F, eccentrics d d, and bars d' d', substantially as and for the purpose specified.

4. The combination, with the uprights B B and eccentric shaft F, of the springs E E, substantially as and for the purpose specified.

5. In an ironing-machine, the combination, with the ironing-rollers C C' rotating at different velocity, of the fluting-rollers N N', the roller N being secured to the roller C so as to revolve with it, and the roller N' being secured to the roller C' so as to revolve thereon, substantially as and for the purpose specified.

CHARLES MACKH.

Witnesses:

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